

WHAT IS CLAIMED IS:

1. Electrically operated equipment comprising:-

(16) an environmentally sealed enclosure having at least one wall permeable to inductive magnetic flux;

5 an electrically operated circuitry environmentally protected within the enclosure; and (18)

a magnetic field generator within the enclosure and interconnected to the electrically operated circuitry to produce a magnetic flux indicative of a state of operation of the circuitry, the flux, after passage through the permeable wall, to
10 induce an electrical current in a magnetic flux sensor (28) outside the enclosure, and produce a visual indication (36) of the state of operation of the electrically operated circuitry.

15 2. Electrically operated equipment comprising:-

an environmentally sealed enclosure having at least one wall permeable to a magnetic flux;

an electrically operated circuitry environmentally protected within the enclosure;

20 a magnetic field generator within the enclosure and interconnected to the electrically operated circuitry for producing a magnetic flux indicative of a state of operation of the electrically operated circuitry, said magnetic flux to pass through the permeable wall;

25 a magnetic flux sensor positioned outside the enclosure to be influenced by the magnetic flux, thereby to induce an electrical current corresponding to the magnetic flux; and

30 a visual indicator positioned outside the enclosure and electrically connected to the sensor and controllable by the electrical current to produce a visual indication of the state of operation of the electrically operated circuitry.

35 3. Equipment according to claim 2, wherein the electrically operated circuitry comprises an electronic circuitry.

4. Equipment according to claim 2, wherein the electronically operated circuitry comprises a power circuitry.

5. Equipment according to claim 2, wherein the magnetic field generator comprises a magnetically permeable core with an electrically conductive coil wound onto the core.

6. Equipment according to claim 2, wherein the magnetic flux sensor and the visual indicator are mounted upon the enclosure.

7. Equipment according to claim 2, wherein the magnetic flux sensor and the visual indicator are both environmentally sealed.

8. Equipment according to claim 2, wherein the magnetic flux sensor and the visual indicator are both sealed within a common carrier and are electrically interconnected for electrical current transmission within the common carrier.

9. Equipment according to claim 8. wherein the magnetic flux sensor comprises an electrically conductive coil.

10. Equipment according to claim 9, wherein the electrically conductive coil of the magnetic flux sensor is wound around a permeable core.

11. Equipment according to claim 9, wherein the electrically conductive coil of the magnetic flux sensor is wound around an air core.

12. Equipment according to claim 8, wherein the common carrier has a front and a rear and comprises a multi-layer structure with the adjacent layers environmentally sealed together, and with the magnetic flux sensor and the visual

indicator each carried by an inner layer of the multi-layer structure, and with the visual indicator visible, when operated, from in front of the common carrier.

5 13. Equipment according to claim 12, wherein the visual indicator projects forwardly from a front surface of its carrier layer and a spacer inner layer is attached adhesively to the front surface of the carrier layer, the spacer layer defining a space into which the visual indicator extends.

10 14. Equipment according to claim 12, wherein the magnetic flux sensor projects in at least one direction away from its carrier layer and a spacer inner layer is attached adhesively to the appropriate surface of the carrier layer, the spacer inner layer defining a space into which the magnetic flux sensor extends.

15 15. Equipment according to claim 12, wherein the multi-layer structure comprises a support layer positioned rearwardly of the magnetic flux sensor and the visual indicator.

20 16. An electrically operated equipment comprising:-
an environmentally sealed enclosure having at least one wall permeable to a magnetic flux;

25 electrically operated circuitry comprising electronic telecommunications circuitry and electrical power circuitry environmentally protected within the enclosure;

30 each circuitry having an individual magnetic field generator within the enclosure, each individual magnetic field generator interconnected to its associated circuitry for producing a magnetic flux indicative of a state of operation of the associated circuitry, said magnetic flux to pass through the permeable wall;

35 an individual magnetic flux sensor associated with each magnetic field generator, each magnetic flux sensor positioned

outside the enclosure to be influenced by the magnetic flux from the associated magnetic field generator to induce an electrical current corresponding to the magnetic flux; and

an individual visual indicator associated with each magnetic flux sensor, each visual indicator positioned outside the enclosure, electrically connected to the associated magnetic flux sensor and controllable by the electrical current induced at its sensor to produce a visual indication of the state of operation of the associated electrically operated circuitry.

17. Equipment according to claim 16, wherein all magnetic flux sensors and all visual indicators are environmentally sealed within a common carrier and each visual indicator is electrically connected to its associated magnetic flux sensor for signal transmission within the common carrier, the common carrier being permeable to the magnetic flux to enable each magnetic flux sensor to sense the magnetic flux from its associated magnetic flux generator.

18. A visual indication device for indicating a state of operation of electrically operated equipment comprising:-
a magnetic flux sensor capable of being influenced by a magnetic flux to induce an electrical current in the sensor corresponding to the magnetic flux;

a visual indicator electrically interconnected to the magnetic flux sensor and controllable by the induced electrical current to produce a visual indication of a state of operation of the electrically operated equipment; and

a common carrier, the magnetic flux sensor and the visual indicator being environmentally sealed within the common carrier and electrically interconnected within the common carrier.

19. A device according to claim 18, wherein the magnetic flux sensor comprises an electrically conductive coil.

20. A device according to claim 19, wherein the electrically conductive coil of the magnetic flux sensor is wound around a permeable core.

5 21. A device according to claim 19, wherein the electrically conductive coil of the magnetic flux sensor is wound around an air core.

10 22. A device according to claim 18, wherein the common carrier has a front and a rear and comprises a multi-layer structure with adjacent layers of the structure environmentally sealed together, and with the magnetic flux sensor and the visual indicator each carried by an inner layer of the multi-layer structure, and with the visual indicator visible, when operated, from in front of the common carrier.

15 23. A device according to claim 22, wherein the visual indicator projects forwardly from a front surface of its carrier layer and a spacer inner layer is attached adhesively to the front surface of the carrier layer, the spacer layer defining a space into which the visual indicator extends.

20 24. A device according to claim 22, wherein the magnetic flux sensor projects in at least one direction away from its carrier layer and a spacer inner layer is attached adhesively to the appropriate surface of the carrier layer, the spacer inner layer defining a space into which the magnetic flux sensor extends.

25 25. A device according to claim 22, wherein the multi-layer structure comprises a support layer positioned rearwardly of the magnetic flux sensor and of the visual indicator.

30 26. A method of visually indicating an operational state of an electrically operated circuitry which is environmentally

sealed within an environmentally sealed enclosure comprising:-

producing a magnetic flux within the enclosure, the magnetic flux indicative of the state of operation of the electrically operated circuitry;

5 passing the magnetic flux through a flux permeable wall of the enclosure, to the outside of the enclosure; and

 on the outside of the enclosure, sensing the magnetic flux, inducing the sensed flux into a corresponding electrical current and, with the electrical current, operating a visual
10 indicator to indicate the state of operation of the electrically operated circuitry.

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